

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Date Form Completed: 10/24/2011

General Site Information

Region:	Region 7	City:	Granby	State:	Missouri
CERCLIS EPA ID:	MOD981507585	CERCLIS Site Name:	Newton County Mine Tailings		
NPL Status: (P/F/D)	Final (F)	Year Listed to NPL:	2003		

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

The Newton County Mine Tailings Site is part of the Tri-State Mining District which covers hundreds of square miles in southwestern Missouri, southeastern Kansas and northeastern Oklahoma. The Site is located immediately south of Joplin, Missouri in southwestern Missouri, and involves rural and agricultural lands and communities including primarily Granby, Wentworth, Diamond and Stark City.

The Site includes former mining camps where mining, milling and smelting were conducted from the 1850s to the 1950s. The primary contaminants of concern are lead, zinc and cadmium contained in several types of waste materials, including mine wastes, mill wastes and smelter-related materials. Approximately 2.8 million cubic yards of wastes affect about 260 acres. The contaminated wastes are stockpiled in the former camp areas and have migrated into soils, groundwater and surface water pathways including streams, creeks and rivers. The areas designated for remediation include properties which are located in communities, and properties with private homes located either on or immediately adjacent to wastes. Future land use is not anticipated to change.

The Site has been managed as two operable units with OU1 work conducted by responsible parties, and this work has been completed. The OU2 is a fund-lead remediation and the subject for the Panel. \$15.2 million has been obtained from responsible parties and placed into a special account. \$3.3 million of special account funds have been used to implement a drinking water removal action and the RD. Approximately \$11.9 million remains in the special account for implementation of the remedy.

General Project Information

Type of Action:	Remedial	Site Charging SSID:	07RZ
Operable Unit:	02	CERCLIS Action RAT Code:	RA001

Is this the final action for the site that will result in a site construction completion? X Yes ☐ No

Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control? X Yes ☐ No

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

OU1: During 1999, extensive sampling in Granby and Diamond led to a time-critical removal action by the PRPs involving the cleanup of 14 residential yards and 1 day care center. As a non-time critical removal action, the PRPs conducted cleanups of 300 additional yards in Granby, and EPA conducted cleanup of 100 properties throughout the rest of the site. These removals were completed in 2002.

Private well sampling identified approximately 700 private wells contaminated above the removal action criteria. Bottled water was provided and a 2003 removal action installed permanent water supplies throughout areas of groundwater contamination. Installation of the water systems is completed except for one residential area which is

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

expected to be completed within 2012.

OU2: EPA completed the RI/FS and the ROD was signed in 2010. The RD has been recently submitted and will be approved before the end of calendar year 2011.

The major components of the selected remedy are:

- X Removal of metals contaminated mining and milling wastes, soils, and intermittent tributary stream sediments
- X Disposal of the contaminated wastes, soils, and sediments in a central repository to be constructed on site
- X Capping of the repository with an 18-inch soil cover
- X Re-contouring the excavated areas to promote drainage
- X Re-vegetation of the excavated areas and the repository with native grasses
- X Monitoring Site streams for assessing the effect of cleanup
- X Establishing institutional controls to restrict the future use of the disposal areas

Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

Seventeen (17) areas have been designated for remedial actions in Newton County, with three (3) in Granby, two (2) beside Stark City, Four (4) near Wentworth, three (3) near Diamond and five (5) areas immediately south of Joplin, known as the Spring City/Spurgeon sub-district. For each of the designated areas, excavation of mining wastes, contaminated soils and contaminated sediments will occur, followed by re-contouring and re-vegetation. The materials will be transported to the central repository in Granby.

The Granby central repository will be capped with an 18-inch soil cover. Monitoring of streams and implementation of future -use ICs will complete the action for all designated areas.

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:

The ongoing drinking water activities will be completed before the completion of the OU2 remedy. Thus, completion of the OU2 remedy will achieve the construction completion accomplishment for this Site.

Response Action Cost

Total Cost of Proposed Response Action:

(\$ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)

The total cost estimate for the OU2 remedy is \$19,500,000, including \$19,300,000 for construction costs and 30 years of O&M totaling \$200,000. **Exemption 5: DP**

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Source of Proposed Response Action Cost Amount:

(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc...)

2010 RI/FS and ROD.

Breakout of Total Action Cost Planned Annual Need by Fiscal Year:

(If the estimated cost of the response action exceeds \$10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding scenario.)

Exemption 5: DP

Other information or assumptions associated with cost estimates?

Exemption 5: DP

Readiness Criteria

1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

Estimated in January 2012

2. If Non-Time Critical, is State cost sharing (provide details)?

N/A

3. If Remedial Action, when will Remedial Design be 95% complete?

Final will be approved by 12/2011.

4. When will Region be able to obligate money to the site?

January or February 2012 for Special Account funds

December 2012 for fund-lead funds

5. Estimate when on-site construction activities will begin:

March 2012

6. Has CERCLIS been updated to consistently reflect project cost/readiness information?

Yes

Site/Project Name:

Newton County Mine Tailings

Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)

Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:

Human exposures to lead were assessed separately from cadmium and zinc, through the use of the Integrated Exposure Uptake Biokinetic Model (IEUBK). The risk assessment identified potential noncancer health risks for children and adults who live on and near mill wastes, particularly those who also consume home grown garden produce. Human exposure to cadmium and lead in soils, mill wastes, and garden produce accounted for most of the numeric calculated health risk.

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

MEDIUM	<2yrs	<10yrs	>10yrs
Soils/Waste Materials	100 – 200	100 – 200	100 - 200
Drinking Water	0 Due to removal action	0	0
Surface water	0 Ecological risk	0	0
Sediment	0 Ecological risk	0	0

Discuss the likelihood that the above exposures will occur:

Exposures are residential near former mining sites. Sites are not restricted for access. Future land-use is not expected to change.

Other Risk/Exposure Information?

Primary human exposures are people living on and recreating on former mining sites, notably children.

Site/Project Name: Newton County Mine Tailings

Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)

Describe the means/likelihood that contamination could impact other areas/media given current containment:

Waste materials were disposed decades ago and are currently uncontrolled and incurring normal erosion processes which release contaminants. Contaminants migrate via groundwater and surface water onto uncontaminated soils, into surface water systems and into drinking water supplies.

Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?

No

Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?

No

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?

No

Other information on site/contaminant stability?

None

Site/Project Name: Newton County Mine Tailings

Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)

(Concentration, toxicity, and volume or area contaminated above health based levels)

List Principle Contaminants (Please provide average and high concentrations.):

(Provide upper end concentration (e.g. 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g. standard deviation} or a central tendency values [e.g., average].)

<u>Contaminant</u>	<u>*Media</u>	<u>**Concentrations</u>
Lead	SL, ST, GW, SW	IUBK model used is not concentration-based. Avg Concentration/Max concentration was 1,000/10,000 ppm in soils
Zinc	SL, ST, GW, SW	Avg/Max Concentration = 10,000/133,000 ppm
Cadmium	SL, ST, GW, SW	Avg/Max Concentration = 50/412 ppm

*(*Media: AR – Air, SL – Soil, ST – Sediment, GW – Groundwater, SW – Surface Water)*

*(**Concentrations: Provide concentration measure used in the risk assessment and Record of Decision as the basis for the remedy.)*

Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. *(Please include the clean up level of the contaminants discussed.)*

Lead affects the central nervous system and children less than age 7 years are susceptible to lead contamination.

Zinc is toxic to aquatic ecosystem.

Cadmium is a long-term toxin which damages liver and kidney functions.

Describe any additional information on contaminant concentrations which could provide a better context for the distribution, amount, and/or extent of site contamination. *(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)*

Lead = approx. 70% of samples exceeded 400 ppm residential cleanup criteria

Zinc = approx. 50% of samples exceeded 6400 ppm cleanup criteria

Cadmium = approx. 30% of samples exceeded 40 ppm cleanup criteria

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Other information on contaminant characteristics?

None

Site/Project Name: Newton County Mine Tailings

Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3)

(Endangered species or their critical habitats, sensitive environmental areas.)

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:

Concentrations of cadmium, lead, and zinc in stream sediment exceed sediment toxicity criteria. In addition, cadmium and zinc surface water concentrations in some streams exceed aquatic vegetation toxicity values, and cadmium and zinc sediment concentrations in some stream segments exceed sediment toxicity benchmarks for fish.

Risks to soil function were assessed by comparing COC concentrations to toxicity benchmarks from the literature for plants, earthworms, and other soil invertebrates. Comparisons to phytotoxicity reference values indicate that most mine-impacted soils contain COCs at concentrations that could be expected to adversely affect plant growth. Comparisons to conservative earthworm and other soil invertebrate toxicity benchmarks in the evaluation indicated that mining-related soils contain COCs at concentrations that could be expected to adversely affect earthworm and other soil invertebrate populations.

The analysis evaluated risk to terrestrial receptors by comparing COC concentrations in soil to ecological soil screening levels for specific feeding guilds (i.e., herbivores, vermivores and carnivores) within the terrestrial environment. Comparisons to the feeding guild specific screening levels in the evaluation indicated that mining-related soils contain COCs at concentrations that could be expected to adversely affect populations of terrestrial vertebrates within all feeding guilds examined. The highest risk to adverse effects appears to be associated with terrestrial vertebrates that consume earthworms (i.e., avian and mammalian vermivores) in soils with elevated COC concentrations. The concentrations of metals in soil that would represent an unacceptable risk to terrestrial vertebrates were determined to be 800 ppm lead, 40 ppm cadmium, and 6,400 ppm zinc.

Would natural recovery occur if no action was taken?

☐ Yes ☒ No

If yes, estimate how long this would take.

Not Applicable

Other information on threat to significant environment?

None

Site/Project Name: Newton County Mine Tailings

Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4)

(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Describe the degree to which the community accepts the response action.

During the public comment period for the 2010 Proposed Plan, very favorable comments were received from the public, the state and the Environmental Task Force, which is a citizen-based oversight group.

Describe the degree to which the State accepts the response action.

Supportive

Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc...

The primary point to emphasize is that funding of the OU2 remedy will achieve a construction completion for this Site. Contamination of the watershed system in Newton County will remain after implementation of the OU2 remedy, but the investigation and cleanup of the Newton County watershed system will be part of a larger watershed study/cleanup, including Jasper County. This larger study/cleanup is part of the Jasper County cleanup.